

# grotan<sup>®</sup> BA 21

## Preservative for technical products

- Synergistic acting combination of benzisothiazolone (BIT) and bis(3-aminopropyl)dodecylamine
- Broad, balanced spectrum of effect against bacteria, yeasts and moulds
- Enhanced efficacy especially against pseudomonas sp.
- Free of chloromethylisothiazolone, formaldehyde, formaldehyde depots and other aldehydes
- Effective even in very low use-concentrations

### Active substance

| EINECS-Name:                                   | CAS-No.:  | EC-No.:   |
|--|-----------|-----------|
| N-(3-Aminopropyl)-N-dodecylpropane-1,3-diamine | 2372-82-9 | 219-145-8 |
| 1,2-Benzisothiazol-3(2H)-one                   | 2634-33-5 | 220-120-9 |

### Physico-chemical properties

|                                     |                             |
|-------------------------------------|-----------------------------|
| Colour                              | light yellow - yellow       |
| Form                                | Liquid                      |
| Odour                               | characteristic              |
| Density (20 °C)                     | 1.049 - 1.061 g/ml          |
| Refractive index (20 °C)            | 1.376 - 1.387               |
| Initial boiling point               | ca. 100 °C                  |
| Flash point (ISO 2719)              | > 100 °C                    |
| Flow time (DIN 53211 - 20 °C)       | < 15 s                      |
| Water solubility (20 °C)            | in all proportions          |
| Foaming                             | Foaming possible (in water) |
| VOC-Content to Directive 2004/42/EC | 5 %                         |

### Fields of application

The optimum use level should be evaluated by means of a repeated challenge test (e.g. at Schülke Technical and Microbiological dept). Limits for labelling can be seen from the separate Schülke labelling sheet.

**Use biocides safely. Always read the label and product information before use.**

|                                   | Recommended dosage |                |
|-----------------------------------|--------------------|----------------|
| Watermiscable metalworking fluids | 0.2 - 2.0 g/kg     | (0.02 - 0.2 %) |
| Technical emulsions               | 0.2 - 2.0 g/kg     | (0.02 - 0.2 %) |
| Metal working fluid concentrates  | 4 - 20 g/kg        | (0.4 - 2 %)    |

### Indications for use

|                          |   |
|--------------------------|---|
| General Information      | Grotan <sup>®</sup> BA 21 is suitable for use in water-mixed metalworking fluids, metalworking fluid concentrates and other technical emulsions. Presence of anionic substances may lead to decreased efficacy. Foaming possible  |
| Solubility               | Fully soluble in water.   |
| Recommended use pH range | 3 - 11  |
| Maximum use temperature  | max. 100 °C   |
| Additional advice        | In order to avoid microbial growth and the resultant consumption of preservative from the outset, it is advisable to add Grotan <sup>®</sup> BA 21 to the fresh mix of metalworking fluid. More can be added at weekly to fortnightly intervals depending on the discharge of the metalworking fluid. When adding Grotan <sup>®</sup> BA 21, it should be added at a point with good turbulence in order to ensure good distribution in the system. Before refilling the plant, system cleaning is recommended (e.g. with Grotanol <sup>®</sup> ). Cleaning of equipment is possible by rinsing with water. |

### Microbiological efficacy

The efficacy of the product has been tested against the following microorganisms according to DGHM (German Society for Hygiene and Microbiology). Determination of the minimum inhibitory concentration in the serial dilution test produced the following values (MIC in % of the product):

| Bacteria (gram-negative)       | MIC   | Bacteria (gram-positive)     | MIC   | Yeasts                          | MIC        |
|--------------------------------|-------|------------------------------|-------|---------------------------------|------------|
| <i>Escherichia coli</i>        | 0.008 | <i>Staphylococcus aureus</i> | 0.008 | <i>Candida albicans</i>         | 0.031      |
| <i>Klebsiella pneumoniae</i>   | 0.016 |                              |       | <i>Rhodotorula mucilaginosa</i> | 0.031      |
| <i>Pseudomonas aeruginosa</i>  | 0.063 |                              |       | <b>Moulds</b>                   | <b>MIC</b> |
| <i>Pseudomonas fluorescens</i> | 0.008 |                              |       | <i>Fusarium oxysporum</i>       | 0.016      |
| <i>Pseudomonas putida</i>      | 0.016 |                              |       |                                 |            |

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| Compatibility*           |  |   |
|--------------------------|--|---|
|                          | compatible   | to be avoided   |
| concentrate              | high-alloyed stainless steel (e. g. 1.4571), steel, polytetrafluoroethylene, ethylene-propylene-terpolymer, polystyrene, polyethylene, polyvinylchloride, fluorinated rubber, natural rubber, nitrile rubber | polycarbonate, PVC (soft), sealants and plastics other than mentioned, copper, aluminium, zinc, brass |
| aqueous dilution (0.2 %) | sealants (polytetrafluoroethylene is recommended)  | Water incompatible materials, otherwise see advice for the undiluted product                          |

\*Compatibility has to be proved in each case

| Labelling    |  |
|--------------|--|
| R-phrases(s) | R35, R43, R50  |
| S-phrases(s) | S26, S29, S35, S36/37/39, S45  |
| Labelling    | C (Corrosive), N (Dangerous for the environment)   |
|              | For further hazard instructions and safety advice please refer to the actual material safety data sheet. |

## Environmental information

Grotan<sup>®</sup> BA 21 contains only biodegradable components. Dilutions of Grotan<sup>®</sup> BA 21 do not normally interfere with the operation of waste water treatment plants. The canisters and drums used by Schülke are made of polyethylene (HDPE) and are labelled accordingly. The containers are covered by a return scheme that ensures collection of the used containers free of charge and appropriate reuse all over Europe. The labels are made of PE. Schülke packaging materials contain no PVC and can be recycled. For further information please ask for our detailed environmental report.

## Listings and approvals of active ingredients

EINECS / ELINCS (Europe)  
TSCA (USA)  
DSL / NDSL (Canada)  
PICCS (Philippines)  
AICS (Australia)  
IECSC (China)

## Transport & Storage

|                 |  |
|-----------------|--|
| Dangerous goods | Yes  |
| UN-Number       | 1719   |
| Packaging group | II   |
| Package sizes   | 10 kg, 200 kg, 1000 kg   |
| Shelf life      | 24 Months  |
| Storage         | Protect from frost, heat and direct sunlight. Store at room temperature in the original container. |

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Our recommendations regarding our products are based on in-depth scientific testing in our Research Department; they are given in good faith, but no liability can be derived from them. It is the responsibility of the final product manufacturer to assure that claims made for the final product are in conformance with all applicable local laws. In other respect our Conditions of Sale and Supply apply.

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